



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,764	01/30/2004	Asif Q. Khan	3-13	7080
7590 Ryan, Mason & Lewis, LLP 90 Forest Avenue Locust Valley, NY 11560		12/11/2007	EXAMINER ELALLAM, AHMED	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 12/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/768,764	KHAN ET AL.
	Examiner	Art Unit
	AHMED ELALLAM	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 January 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5 and 9-20 is/are rejected.
- 7) Claim(s) 6-8 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 January 2004 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 01/30/2004.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3, 5, 9-15, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Karr et al, US 6,850,523. Hereinafter referred to as Karr.

Regarding claims 1 and 19, with reference to figures 2, 3 and 6, Karr discloses a method for a link layer device (unit 12, figure 2) polling of a plurality of ports of one or more physical layer devices (unit 15, figure 2) connectable to the link layer device in a communication system (figure 2), the method comprising:

A configuration for a multi-PHY packet-level transfer with polling and a selection sequence in which the link layer device 12 is not restricted in its polling order, wherein the link layer device 12 is not constrained to select the latest PHY polled, and as soon as the packet transfer is started, the polling process may be recommended, and monitoring the selected PHY status and halting data transfer once the FIFO is full. In addition, Karr discloses polling other physical layer devices at any time, including while a data transfer is in progress. See column 7, line 65-column 8, line 19. (Claimed designating at least one of the plurality of ports as a port for which status information is to be requested by the link layer

device on a more frequent basis than such information is to be requested for one or more other ports of the plurality of ports; and polling the plurality of ports in accordance with a non-linear polling sequence such that the at least one designated port is polled more frequently than the one or more other ports as in claim 1, and a link layer device connectable to the one or more physical layer devices; the link layer device being operative to designate at least one of the plurality of ports as a port for which status information is to be requested by the link layer device on a more frequent basis than such information is to be requested for one or more other ports of the plurality of ports; and the link layer device being operative to poll the plurality of ports in accordance with a non-linear polling sequence such that the at least one designated port is polled more frequently than the one or more other ports, as in claim 19).

Regarding claims 2 and 3, Karr discloses a PHY transmit interface may transmit to the link layer transmit interface, in response to an address of the physical layer device being polled, a Polled-PHY Transmit Available (PTPA) signal to indicate whether or not a polled PHY transmit FIFO is full. The PHY transmit interface may transmit to the link layer transmit interface a Selected-PHY Transmit Available (STPA) signal to indicate whether or not a selected PHY transmit FIFO is full. (Claimed the status information comprises backpressure status as in claim 2, and the backpressure status for a given one of the plurality of ports comprises an indicator of one of at least two states of the given port, including a backpressure assertion state and a backpressure de-assertion state

indicative of the respective presence or absence of backpressure at the given port, as in claim 3).

Regarding claim 5, Karr discloses polling other physical layer devices at any time, including while a data transfer is in progress. See column 7, line 65-column 8, line 19. (Claimed the designated port comprises a port to which the link layer device transmits data in conjunction with a current data transfer).

Regarding claims 9 and 10, Karr discloses polling other physical layer devices at any time, including while a data transfer is in progress. See column 7, line 65-column 8, line 19. (Such teaching of Karr implicitly provides for the feature of not polling any other port of the physical devices except the one related to the current data transfer, and that corresponds to the claimed the non-linear polling sequence is utilized only in conjunction with transfer of data from the link layer device to at least one of the plurality of ports over an interface bus, as in claim 9 or polling other physical layer devices at any time regardless of data transfer, and that corresponds to the claimed a linear polling sequence is utilized in the absence of transfer of data from the link layer device to at least one of the plurality of ports over an interface bus).

Regarding claim 11, Karr discloses polling other physical layer devices at any time, See column 7, line 65-column 8, line 19. (Claimed the non-linear polling sequence is configured so as reduce a status reporting latency for the designated port relative to that associated with use of a linear polling sequence).

Regarding claim 12, Karr discloses the PHY transmit interface may transmit to the link layer transmit interface, in response to an address of the physical layer device being polled, a Polled-PHY Transmit Available (PTPA) signal to indicate whether or not a polled PHY transmit FIFO is full. The PHY transmit interface may transmit to the link layer transmit interface a Selected-PHY Transmit Available (STPA) signal to indicate whether or not a selected PHY transmit FIFO is full. (Claimed the non-linear polling sequence is configured so as to limit an amount of data transferrable by the link layer device to the designated port over an interface bus subsequent to the port entering a backpressure assertion state).

Regarding claim 13, with reference to figure 2 and 3, Karr shows each of the plurality of ports comprises a port of a single physical layer device connectable to the link layer device.

Regarding claim 14, with reference to figure 3, Karr shows a link layer device having a plurality of ports, in addition Karr discloses having a plurality of Link layer devices, see column 7, line 65-column 8, line 29. (Claimed a first subset of the plurality of ports comprises one or more ports of a first physical layer device connectable to the link layer device, and a second subset of the plurality of ports comprises one or more ports of a second physical layer device connectable to the link layer device).

Regarding claim 15, the link layer device of Karr is a network processor by definition. (Claimed the link layer device comprises a network processor).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karr.

Regarding claim 4, Karr discloses the link layer device communicates with the one or more physical layer devices over an interface bus the bus being configured in accordance with POS-PHY standard, see figure 3, column 3, and lines 48-49. Karr doesn't specify the Interface bus is an SPI-3 interface standard.

However, it would have been obvious to a person of skill in the art, at the time the invention was made to implement the method of Karr over a bus in accordance with an SPI-3 standard in lieu of the POS-PHY standard so that the method of Karr can be used also in accordance with established system packet interface protocols. The advantage would be the ability to provide higher bit rate data transfers the SPI interface standard provides between link and physical layer devices, in addition to implementing the polling mechanism of Karr in an SPI interface environment.

Regarding claim 20, claim 20 is an article of manufacture for implementing the method of claim 1. Karr doesn't specify an article of manufacture for implementing the method. However, article of manufacture comprising machine-readable storage medium having one or more software programs stored therein, for executing method steps are well known in the art. Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made to implement the method of Karr using an article of manufacture set up. The advantage would be the implementation of Karr method using software which is much cheaper than hardware resulting in saving cost and implementation time.

3. Claims 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Karr in view Cam et al, of US 6671758. Hereinafter referred to as Cam.

Regarding claims 16, 17 and 18, as discussed above with regard to parent claim 1, Karr discloses non-linear polling. However, Karr doesn't specify downloading polling configuring information to the link layer device from an external processor as in claim 16 and storing the configuration information in a data structure in a memory of the link layer device, the contents of the data structure defining an order in which the ports are polled in accordance with the non-linear polling sequence, as in claim 17, and the data structure being a calendar table, as in claim 18.

However, Cam discloses in the same field of endeavor of link layer device polling of phys devices (Figure 1), a table (table 6) (claimed calendar table) that have parameters (claimed polling configuring information), the parameters are

set by programming through an external management interface into the link layer device and the phy devices, see column 17, line 46-column 18, lines 25.

Therefore, it would have been obvious to externally program the Link layer device of Karr as taught by Cam by providing the necessary memory storage means, so that flexibility in design can be accomplished by programming the link layer device and physical devices of Karr without substantial modification to the hardware. The advantage would be the ability to program the link and the physical devices of Karr with the necessary software to adapt to different applications as a need arises, avoiding the cost of hardware alternative required for new applications, and also to use different Interface protocol standards using substantially the same hardware.

Allowable Subject Matter

4. Claims 6-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See Form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AHMED ELALLAM
Examiner
Art Unit 2616
12/5/07


CHI PHAM
SUPERVISORY PATENT EXAMINER
12/10/07